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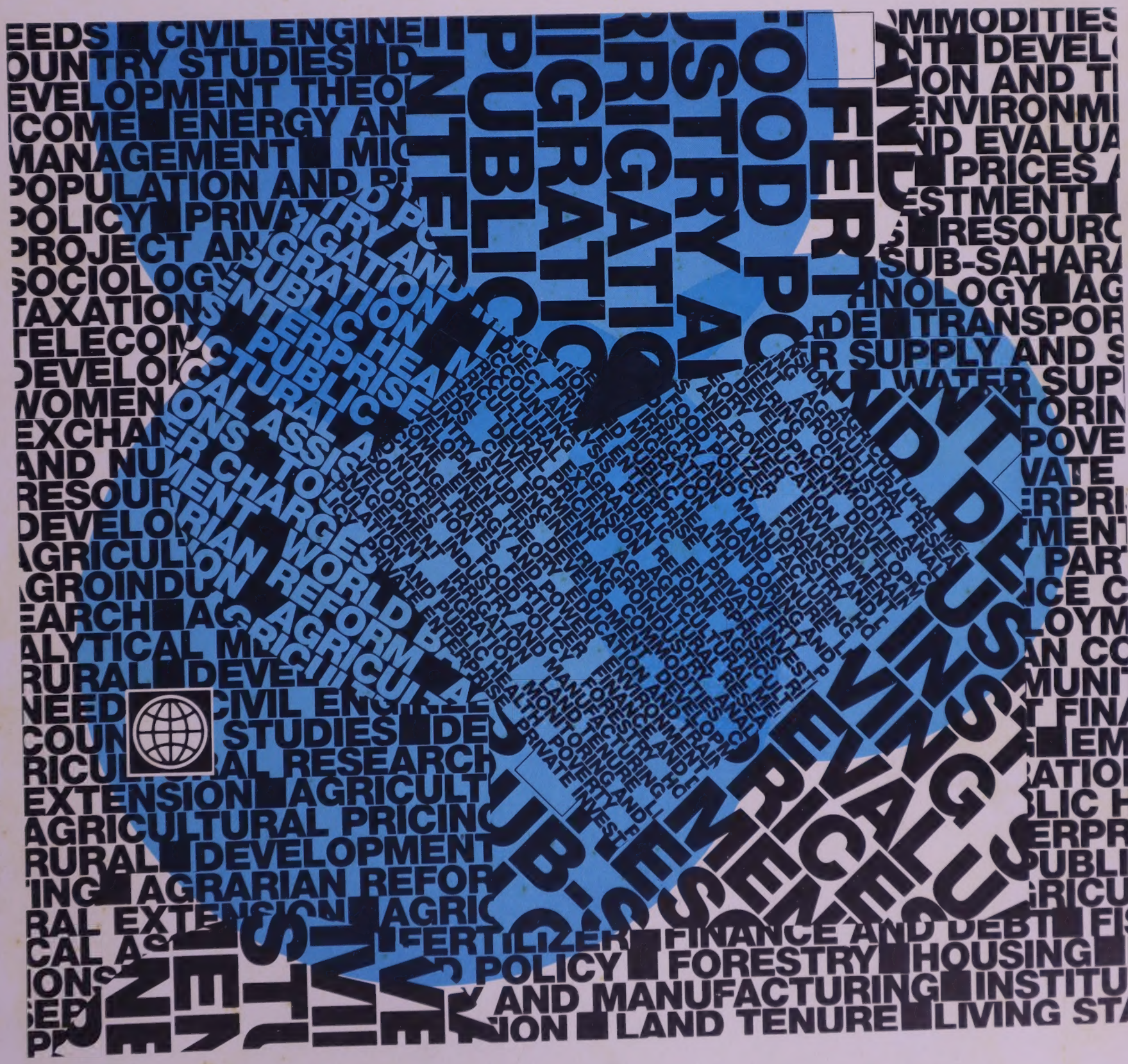
From Barefoot Doctor to Village Doctor in Rural China

Willy De Geyndt, Xiyan Zhao, and Shunli Liu



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FOREWORD

The health status of China's population is far better than what would be expected at its stage of development. Family planning, childhood immunization, accessible primary health care for mothers and children, improved nutrition, infectious disease control and better education, sanitation and housing have contributed to remarkable gains in health status and in life expectancy. Financing of health services changed in the 1980s when government decided, in implementation of its economic reforms, to make cost recovery the foundation of health care financing. Government's financial system reforms and decentralization policies resulted in relative declines in public resource flows to the health sector to pay for adequate salaries and other recurrent costs, and, hence, a greater reliance on financial self-sufficiency.

During the process of preparing a lending operation, the authors were in a position to observe and analyze the impact of the implementation of the new economic policies on the organization, delivery and financing of rural health services especially among people in remote and poor regions where the levels of morbidity and mortality of infectious diseases are much higher than the national averages. This study from the Asia Technical Department looks at the provision and financing of health services at the village level using 1990 survey data. It focuses on the village doctor - the former barefoot doctor - as the main provider of care, on the strengths and weaknesses of this private entrepreneur and how his/her services are paid for.

The study is intended for health policy analysts and political decision makers. China's policies of financial self-sufficiency for rural health and social services provide an analytic opportunity to reflect on policy choices and policy instruments to achieve affordable, equitable and quality health care services to improve a population's health status.

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The views expressed in this paper are those of the authors and do not necessarily reflect those of the institutions with which they are affiliated. The World Bank and the Government of the People's Republic of China do not accept responsibility for the views expressed herein which should not be attributed to the World Bank or to its affiliated organizations or to the Government of the People's Republic of China.

ABSTRACT

The organization, delivery and financing of rural health care at the village level have been de facto privatized with the implicit approval of the Government. Privatization is defined here as the transfer of the financial risk and of service responsibility from the public payor to the private payor. Government has allowed this to happen without providing explicit models and regulations to guide the empowered communities in the organization, management and financing of their health services. This paper recalls the impressive results of the Chinese model of primary health care achieved in the past three decades and reviews the evolution of the barefoot doctor of the 1960's and 70's to the village doctor of the 80's who is the major health care provider in rural areas. Using data from a 1990 nationwide sample survey, the demographic characteristics, income, working patterns, general education and professional training, and training preferences of the current village doctors are presented. Two key issues in rural health care in China are discussed: quality of health services and their financial sustainability. The paper suggests alternative ways to train village doctors in order to improve their technical competence and alternative ways to pay for their services. The policy implications of the on-going privatization of rural health care and policy choices are discussed, a redefinition of the role and functions of the village doctor is recommended, and a networking strategy for integrating rural health services functionally and financially is suggested.

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Provision of health services in rural China during the first three decades (1949-79) of the People's Republic was guided by the Maoist model of medicine that emphasized a wide distribution of preventive public health activities, supplied by minimally trained health workers and traditional practitioners, and financed mainly by the community out of local collective resources. The model also relied on political mobilization and patriotic health campaigns in support of the public health/community medicine approach and quickly and permanently raised the health status of the largest population in the world. China's spectacular success in reducing infant mortality and increasing life expectancy has been admired by other developing countries and has been abundantly documented in the public health literature. Observers however have also pointed out that China's achievements in rural health care must be placed in the social, economic and political context that produced them and cannot be simply transplanted. Major elements of the context were decisions to minimize imports, ban private economic activity, assign university graduates on a compulsory basis, control wages, consolidate small private farms into large publicly owned communes, restrict geographic mobility, and exclude free or independent professions (Blendon, 1979).

The Barefoot Doctor

In China, as well as in the rest of the world, the barefoot doctor (village health care provider) has epitomized the means to improve the health conditions of large masses of people quickly and cost-effectively. In 1975 there were about 1.6 million barefoot doctors or one barefoot doctor for 400 rural inhabitants. Their initial three month training in township (then commune) health centers was supplemented by supervision from the health center staff, return training visits to the health center and occasional refresher courses. Their training stressed preventive and promotive health activities and basic curative care. The training manual started on the first page by stressing two cardinal public health principles: a hygienic environment and safe water. The policy of "putting prevention first" was strictly adhered to and improved the health status of the Chinese people at an affordable cost. The village doctor's knowledge of clinical medicine was minimal, integration of traditional and Western medicine was encouraged, and Western drugs were used extensively coupled with traditional Chinese medicine prescriptions.

Barefoot doctors were selected and supported by their villages (then brigades) and were accountable to the village committee. Brigade level health services were financed by the village collective welfare fund and by contributions from the villagers except for some basic equipment and medical supplies (vaccines, contraceptives) received from the county government. Noteworthy also is that local government paid for the cost of training. By and large rural health services were decentralized and communities were empowered to select and pay the provider of health care.

Barefoot doctors were responsible in theory for the following seven functions according to Zhou (1984): (i) organizing local health campaigns; (ii) promoting disease prevention and maternal and child health care activities; (iii) treating common diseases; (iv) referring more complicated cases to higher level units; (v) health education and promotion; (vi) advising on family planning; and (vii) collecting and reporting health-related information. Other observers however

note that in practice the activities of the barefoot doctor were concentrated on epidemic disease prevention and on treatment of common diseases.

The Village Doctors

The new economic policies of the late 1970s mark a turning point in the provision and financing of rural health care and in the training of barefoot doctors. Numerous observers have described and analyzed the positive and negative impact of the shift away from the collective agriculture system to the household economic responsibility system (Hsiao 1984, Young 1989, Kan 1990, Henderson 1988, Gu Xing-Yuan 1991, Parker 1991). The unitary collective system of production changed to group and family based contract systems with collective labor being replaced by individual labor with the family as a major production unit. Warnings about the potential negative consequences of de-collectivization on the organization, financing and delivery of rural health services were sounded as early as 1984:

> "The economic reforms have altered the peasants' incentives, weakened community organization, and lessened the central government's influence over local communities. The consequences of these changes are multifold: a decreased supply of barefoot doctors, disintegration of organized primary care, a decline in cooperative health insurance, reduced primary health care, and an increased demand for higher-quality medical care" (Hsiao 1984).

The name "barefoot doctor" was replaced in 1981 by "village doctor" or "health aide" and it was officially abolished in 1986. Barefoot doctors were given the opportunity to pass a formal examination to qualify as village doctor. Those that passed received a certificate of village doctor and those that failed were called village health aides. The assessment is said to be equivalent to graduating from a county health school.

In the wake of the macroeconomic changes and the restructuring of rural society, the 1980s witnessed the decline of the Maoist model of health care, an expansion of the use of Western drugs, of imported biomedical technology and of hospital-based care. This fundamental shift occurred in an environment of epidemiological transition from mainly communicable, infectious and parasitic diseases to mainly chronic and noncommunicable diseases (World Bank, 1990), and of a demand for better quality and more accessible care buttressed by increased disposable income in the more prosperous areas of the country.

The knowledge base and the clinical skills of the village doctor were not purposefully adapted to cope systematically with the changes sweeping the Chinese countryside. In 1987 the number of village doctors was less than half the number of barefoot doctors in 1975; adding the number of health aides the total is still 300,000 fewer. The barefoot doctors were largely regarded as a product of the cultural revolution and their supply was affected by lack of policy support and the changes in financial resources. A number of them also left the health sector as economic reforms provided better paying job opportunities.

In 1990, China had about 776,000 village doctors and about 455,000 health aides, of whom 26% were female. Adding 470,000 birth attendants, there were

about 1.7 million rural health workers. To lend perspective to these figures, there were about 1.7 million "doctors" for the whole country (including all different levels of Western and TCM trained doctors but excluding rural "doctors") of which roughly 20 percent would be TCM practitioners. There were also about 970,000 nurses and about 562,000 other health professionals in fields such as pharmacy and medical technology (MOPH, 1991). Definitional issues make precise and more detailed classification difficult but these official statistics indicate a general order of magnitude of health personnel in China.

The National Village Doctor Survey

In 1990 the Ministry of Public Health studied a sample of 90,300 village doctors and 251 training institutions. The sample size of about 12 percent is believed to be representative of the universe of village doctors. Counties were randomly selected in each province, autonomous region and municipality. A uniform questionnaire to collect data on village doctors and village doctor training institutions was designed by the Department of Education in the Ministry of Public Health. Questionnaires were distributed by the counties to the village doctors and to training institutions and the completed data collection instruments were subsequently collected by county Bureaux of Public Health.

Age and Sex. Seventy one percent of village doctors are between the ages of 30 and 50 years. The modal age group is 40-49 years (38%), followed by the 30-39 age group (33%). One village doctor in seven is 50 years or older and also one in seven is less than 30 years. The age distribution in 1990 suggests an experienced corps of doctors; those 40 years and older represent more than half (52.5%) of the sample and are likely to be the barefoot doctors of the 1970's (Table 1). This is supported by the finding in 1982 that the mean age of the barefoot doctor was 33 years (Young, 1984). The majority of the village doctors are male (about 78 percent). The low proportion of female doctors may hinder achievement of maternal and child health targets. County governments are aware of this gender discrepancy and many are taking corrective actions by actively recruiting female students and imposing gender quotas.

Table 1. Age Distribution of Village Doctors

	No. of Persons	Percentage
< 20	805	0.9
20 -	12364	13.7
30 -	29735	32.9
40 -	34003	37.7
50 -	10797	12.0
60 -	2555	2.8
Total	90259	100.0

Education. The educational background for about 73 percent of the surveyed village doctors is lower secondary school or less, and only 26 percent stated to have completed secondary school or an equivalent technical school (Table 2). In 1982 the mean number of years of schooling was nine years for male and eight years for female barefoot doctors (Young, 1984) indicating no change during the last decade. Cross-tabulating age with education reveals an inverse relationship; more doctors under the age of 30 tend to have completed lower secondary or secondary school than their older colleagues.

Table 2. Education Level of Village Doctors

Education Levels	No. of Doctors	Percentage
Illiterate	146	0.2
Primary School	13,923	15.4
Junior Middle School	52,035	57.6
Senior Middle School	20,142	22.3
Secondary Special School	3,575	4.0
College	460	0.5
Total	90,281	100.0

Time Commitment and Years of Work Experience. Only 18.6 percent of the respondents declared working full-time as a village doctor; all others combined medical work with farm work. Forty percent divide their time roughly equally between clinic and farm, and 35 percent spent more time on medical tasks than on farm work (Table 3). Two out of three village doctors have more than fifteen years experience in health services provision, having started as barefoot doctors in the 1970s, and an additional 18 percent have more than ten years experience. Thus potentially more than four out of five of today's village doctors were barefoot doctors under the Maoist model of medicine suggesting that their initial orientation strongly emphasized public health measures.

Table 3. Village Doctors' Time Commitment and Years of Work Experience

Work in Health Field	%	Work Experience (Years)	%
Full Time	18.6	0 - 4	6.4
"Most of the Time"	34.9	5 - 9	11.5
Half Time	39.7	10 - 14	17.9
Other	6.8	15 - 19	22.0
		20+	42.2
Total	100.0	Total	100.0

Medical Training: How much and Where. More than half (56%) of the responding village doctors received one year or less training and only 20 percent trained for more than two years. However, length of training was reported cumulatively as one third of the respondents listed three or more training periods, one third reported two courses of training and one third one single period of training. Multiple short-term training periods are related to the place of training. In effect, almost two out of three (58%) village doctors were trained in a service delivery institutional setting such as the county hospital or the township health center and only one third in county health schools. The former are most likely those in the group with multiple training periods totaling one year or less training and those trained in a training institution are most likely the ones with more than one year of training.

Village doctor training is generally short, practice-based and took place many years ago as two thirds started their medical career more than fifteen years ago. Noteworthy and an encouraging sign for the future is the fact that 71 percent of the village doctors under the age of thirty received their training in a county health school[1]. The training of the older generation - the previous barefoot doctors - is mainly experiential and practice-based; the younger village doctors are graduates of county level institutions. Field observations and visits to county health schools by the authors lead to a serious concern that the curriculum of county health schools is too theoretical and has limited and unsupervised practicums, thus swinging the pendulum from one extreme of only practice and experience to the opposite extreme of mainly theoretical book knowledge. Redressing the balance between theory and practice should be an educational priority.

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[1]See later paragraph on training institutions for details on county health schools.

Income. Their total income reflects their time commitment: on average 62 percent is derived from their medical practice and 38 percent from farm work or other non-medical sources (Table 4). Total income in 1990 was about 1,500 Yuan or about US$300, roughly equivalent to the country's per capita GNP. The bulk (77%) of their doctor income comes from providing curative services among which the sale of drugs (pills, injections, intravenous solutions, herbs) accounts for most of it. The government's approved markup is 15% for Western drugs and 30% for TCM drugs; however the unit cost of Western drugs is much higher making their sale financially more attractive. The remaining 23 percent of their doctor income comes from the county or township as subsidies for disease prevention activities, anti-epidemic and other preventive services. Financial incentives for preventive activities are quite modest and a low level motivator.

Table 4. Village Doctors' Income 1989

Net Income	Amount (¥)	%
Income from Health Services:	946.85	62.1
Medical Services	731.47	
Disease Prevention	56.08	
Anti-epidemic Work	68.23	
Subsidy for other Services	91.07	
Income From Farming or Other Sources	577.46	37.9
Total	1524.31	100.0

Method and Contents of Training Requested. Responses by 84 percent of the sample who indicated a desire for additional training are mutually exclusive and therefore do not distinguish between the method and the contents of the desired training (Table 5). More than half responded in terms of training method and half of these requested correspondence courses or full-time study for less than three months. This preference in training method reflects their entrepreneurial status and the opportunity cost associated with going away for training. Only one out of six would be willing to train full-time for one year or more. In terms of training content, one out of four requested clinical training expressing their interest in sharpening their curative skills and implicitly improving their financial situation. The survey did not inquire about specific skills desired from additional training. A 1982 study (Young, 1984) did ask this question and Western medicine was desired by half of the barefoot doctors followed by traditional medicine (27%) and maternal and child health (12%).

Table 5. Training Requested

Type of Training Requested by Village Doctors	No. of Doctors	Percentage
Full-time study for 2 years or more	5,993	7.9
Full-time study for half a year	8,443	11.2
Full-time study for less than 3 months	9,336	12.4
Fellowship for a Year	7,299	9.7
Correspondence training for 2 years or more	12,471	16.5
Clinical training	19,594	25.9
Other	12,381	16.4
Total	75,517	100.0

Training Institutions. There were 1689 medical training institutions in the country for formal training of village doctors in 1989. The major responsibility of the training is borne by county level health schools. County health schools - of which there were 1,047 in 1989 - are non-accredited educational institutions mainly supported by student tuition and fees and partially subsidized by the county government. Entering students have an elementary school education and usually field experience. The training period may vary from one to three years. Graduating students are not guaranteed a job and their certificate is not recognized beyond the county boundaries. National health manpower statistics exclude village doctors or list them separately.

The next higher level of doctor training is the secondary medical school at the prefecture/city level; entering students are lower middle school graduates and graduating students are assistant doctors mostly assigned to county level service delivery and teaching institutions.

The average number of full-time faculty in the sample of training institutions was twelve of which four were graduated from a secondary medical school, four were trained in a "specialized college", and four graduated from a higher level three-year medical college. All the full-time teachers have medical professional titles. On the average, one has the title of "deputy doctor", four are "senior doctor", five are "doctor" and one is "assistant doctor"[2].

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[2]. In the medical hierarchy, there are five categories of professional titles. In descending order they are: Chief Doctor, Deputy Doctor, Senior doctor, Doctor and Assistant Doctor.

Discussion of Findings

A Village Doctor Profile

The profile of the average Chinese village doctor that emerges from this survey is that of a middle-aged male with less than secondary school education, working part-time as a self-employed doctor, having received less than one year on-the-job or classroom medical training but with more than fifteen years of hands-on experience, earning more than the average villager by combining income from village doctor practice and from farm work, and desirous of receiving additional short-term or correspondence training.

Salient Issues

The key issues related to the functions and the satisfactory performance of the village doctor are his technical competence and the financial incentives to earn a living. These issues will be discussed first. The major health policy issue however is the consequence of the demise of the collective system and the effect of the de facto privatization of rural health services on access, financing and quality of medical care for rural residents especially in the poorer areas of the country.

Technical Competence

National and provincial authorities are increasingly concerned about the minimal level of clinical training of the rural doctor combined with the vested authority to dispense potent Western drugs, and about the neglect of preventive public health measures. Clinical mistakes made by the village doctor - and also by assistant doctors at the township level - that are commonly observed are:

(a) misdiagnosis or inability to diagnose as a result of inadequate training and a lack of basic diagnostic tools;

(b) unnecessary or inappropriate prescriptions such as analgesics for acute abdominal pain, intravenous solutions of amino acids for fatigue, 10% instead of 5% glucose administered intravenously, antibiotics for non-bacterial infections such as diarrhea, adrenocortical hormones for common colds., dosage errors for children;

(c) overprescribing antipyretics, antibiotics especially gentamycin, kanamycin, erythromycin and streptomycin (the latter attacking the ear nerve and potentially causing iatrogenic deafness), digitalis and procaine; and

(d) poor aseptic techniques: reuse of disposable syringes; asepsis in deliveries confined only to sterilizing instruments resulting in iatrogenic infections.

The application of public health measures was the strength of the barefoot doctor and underlies China's earlier success in improving health conditions. It is generally acknowledged and lamented now that today's village doctor reacts to health system signals and inadequately and inconsistently applies basic public

health measures to protect the health of the population: sanitation and excreta disposal, safe water supply, reporting of communicable diseases and recording of statistical information, and health education to promote health and prevent illness. Yet most were trained as barefoot doctors initially and therefore their training strongly stressed the application of the traditional public health activities. Thus it is not a lack of knowledge. Current practice and behavior is linked to the second major village doctor issue, viz. the pecuniary incentives, discussed below.

Alternative Training Modes to Improve Technical Competence. Training alternatives range from the formal full-time institution-based model to various modes of continuing education to the supervised application of standards of good practice. Some alternative training strategies are being experimented with in China and some have been applied in other developing countries. The strategic issue is: how best to upgrade the clinical skills of the independent village doctor while at the same time protecting his income during training and increasing the proportion of female doctors?

Full-time Course of Study: County health schools are the appropriate site for training new village doctors through a three year full-time program of studies. Training at the county level offers the best guarantee that the graduating student remains in the county and returns or takes up a post in a village clinic. It would be more likely to apply to young unmarried students who are not heads of households and are not responsible for earning a regular income. It is the best modality for attracting females into the medical profession and achieving a gender balance within a ten year period. The county seat houses the principal service delivery institutions (county general hospital, MCH hospital or center, anti-epidemic station) and is the lowest rung on the organizational ladder of a complete range of public health services.

Unresolved issues are financial and educational. Students desirous to take up a full-time course of study face a double financial obstacle: they cannot earn money while studying and they have to pay tuition. This excludes older students with family obligations and students coming from poor families that cannot count on parental financial support. The county usually assumes some of the financial burden for training village doctors but its irregular yearly revenue causes schools to reduce the length of training from three years to two years and even to one year in some instances. At issue on the educational side is the lack of fit between the curriculum taught in county health schools and the epidemiological reality of the villages; the inadequate teaching and learning methods; faculty not schooled in pedagogy and not prepared to help students learn; the balance between theory and practice and the limited use of clinical supervisors.

Short Courses: County health schools could be the site for offering short intensive courses and refresher courses in specific subject matters to working village doctors. Short courses are financially more accessible to practicing doctors because they require little time away from the job and tuition charges are affordable. For the training institutions, they represent a welcome additional source of revenue. Students enrolling in short courses are motivated to learn because they are self-selected, acknowledge the need for additional training and are willing to spend time, effort and money to upgrade their skills.

This learning receptivity is not matched by the quality of teaching as the short course modality suffers from the same educational weaknesses mentioned in the previous paragraph. Furthermore, short and intensive courses typically offer Western clinical subjects and not public health courses to promote and protect the health of the public.

Independent Study: Medical training institutions at different levels offer a number of training modes in this category. Higher level medical schools offer correspondence courses for village doctors (e.g. Anhui province, Shenyang Medical School in Liaoning province). Self-study by mail for village doctors is also offered by secondary medical schools and by county health schools. Some schools are experimenting with a multi-method on/off campus approach where students receive study materials at home, meet with faculty on campus at regular intervals, attend lectures, or observe practical applications in an integrated and guided mode. Materials are presented in modules but suffer from the same defects as the full-time study materials. Indeed the modules are often no more than chapters in the regular textbooks without adaptation to local needs or change in learning method. Independent study is financially affordable by village doctors and is a promising approach to solve partially the strategic issue of upgrading clinical skills.

Use of Clinical Paradigms: Largely absent in China is the use of clinical protocols or paradigms that guide the clinical decisions of the rural practitioner in the diagnostic and treatment process. Also not observed in village clinics are lists of standards of good practice , i.e., basic do's and dont's. Application of protocols and standards of good practice will not fully meet their objectives unless accompanied by consistent and competent clinical supervision of how well they are used, by correcting inappropriate use and continuous on-the-job teaching. The key to making this practice-improving modality successful depends heavily on the quality and quantity of supervision and this is at the same time its major obstacle. First, clinical supervision is not an ingrained educational technique in China, and second, few counties have the budgetary means to carry out a program of regular supervision to assess performance and to evaluate the correct use of clinical decision-making tools and the consistent application of standards of good practice.

Financial Incentives

Upgrading the clinical skills of the village doctor is a necessary but not a sufficient condition to improve the quality of rural medical services. Increased technical competence, improved diagnostic acumen, availability of appropriate diagnostic technology, and more correct therapeutic decisions may reduce the likelihood of misdiagnosis and inappropriate prescriptions. They will not diminish the excessive and unnecessary prescription of drugs, injectables and intravenous solutions and will not encourage the use of cheaper TCM drugs over more expensive Western drugs as long as the village doctor's income depends on profit made from the sale of drugs.

Since the 1980s, in line with the rural economic structure reforms, there has been a trend towards privatizing the village health clinics. A great variation exists among the provinces. In 1990, about 60 percent of the village clinics

were owned jointly by village doctors or by village doctors and village health aides (MOPH, 1991). The village doctor has become a private entrepreneur and is in business for himself. A fee-for-service (FFS) system is now the dominant way for paying village doctors. The service for which a fee is paid is the dispensing of a pharmaceutical drug. Paying for a drug is a tangible benefit that the patients obtain from using the health service and they are willing to pay because they believe that the medicine will make them get better and feel better.

The charge for seeing or registering a patient on the other hand is minimal. High registration or visit fees may deter patients from seeking care and may also not be politically consistent with the prevailing ideology. Drug charges are acceptable as the patient pays for a concrete product and a visible service that allegedly will cure him or her. The markup for Western drugs is a 15 percent. Cost sharing by the patient is 100 percent at the point of service. The intent of cost sharing is usually to contain costs, to control utilization or to raise revenue. The explicit intent in rural China is revenue generation. It is not known - but reasonable assumptions can be made - to what extent 100 percent cost sharing discriminates against the poor, reduces demand and allocates pharmaceutical drugs by income. High cost sharing makes the sick poor poorer if they seek care. One can argue cynically that given the pattern of wrong and excessive prescribing by untrained doctors, patients that are not able to pay may gain especially when the disease or discomfort is a self-limiting or a psychosomatic condition.

A fee-for-service payment system also prevails at the next higher level of service delivery. The township health center or hospital is still partially subsidized by the county which pays up to 60 percent of salaries and some capital expenses. The balance of the payroll and all other operating expenses must be financed by patient charges. The range of charges is broader at that level and include room charges, x-ray examinations, laboratory tests and other special diagnostic tests. The main source of revenue however is the sale of pharmaceuticals.

Lessons from Developed Countries. What lessons can be learned from the role of the physician in developed countries as it relates to prescription practices? Western countries generally do not allow the physician any longer to sell pharmaceuticals. The custom still persists in the Netherlands where about one sixth of the General Practitioners are still "dispensing GP's". However the dispensing GP is paid a capitation fee which covers overhead costs and he/she is not allowed to make a profit from markups on the wholesale price of the prescribed drug. The practice is being phased out and GP's entering the labor market now do no longer have drug dispensing privileges. German office doctors are paid a fee for writing a prescription but cannot dispense drugs. Collecting fees for writing prescriptions is an important factor driving up utilization of pharmaceuticals in Germany (Glaser 1991).

Prescription and consumption of pharmaceutical drugs tend to be high in countries with statutory health insurance when: (i) providers are paid on a fee-for-service basis and a complete fee can be charged for an office or telephone visit for the purpose of obtaining a prescription (France); or the volume of visits increases because of return visits for the sole purpose of renewing the

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prescription (Belgium); or a smaller dose is entered on each prescription and is for less than the full treatment course (Korea, Japan); (ii) the doctor receives a fee for writing prescriptions (Germany); and (iii) the doctor prescribes and sells pharmaceutical drugs and makes a profit from markups (Japan and Korea).

Alternatives for Paying the Village Doctor

Fee-for-Service. The decentralization policy of the Ministry of Public Health empowered communities to determine how best to organize, finance and pay for rural health services. The ideological shift of the 1980's has influenced the thinking of the majority of the village leaders who now prefer individually run health stations (Shi, 1986 cited in Kan, 1990). At the same time fee-for-service became the prevailing pattern of financing and paying for medical services. Village financing has decreased sharply and - in places where it still exists - has been combined with revenue from pharmaceutical drugs. Policy researchers are analyzing the impact of the socioeconomic changes on financing medical care and early survey findings are disturbing. Illness is shown as being a leading cause of poverty among peasants and about one third of poor rural families are poor because they are sick (Gu, mimeograph 1990). Fewer preventive services are provided in privately owned village stations than in collectively run ones (Zhang 1987 cited in Kan 1990). Alternatives to privately owned village clinics and to paying the village doctors on a fee-for-service basis are actively being considered, introduced, developed or revived.

Capitation. Each member of the community pays a flat premium regardless of age, income or utilization of services. Capitation payments or premiums can be collected by the village, a village health committee, the village doctor or a partnership of village doctors in larger villages. No example exists where the health services for a whole community are organized on a capitation payment basis. Examples are available where a flat premium is paid for a specific age group or diagnostic condition. This is the case for preventive services for infants and children, and for maternity cases and is an insurance approach with level instead of graduated premiums. Premiums collected by the village could be enhanced with village funds and essentially become the former village collective fund. The village would still need to define how to pay the provider if the village fund would finance the health services.

Per Case. There are isolated case-based payment examples but only for pregnancy care where the village doctor receives a lump sum for prenatal, delivery and postpartum care. No attempts seem to be made for a payment system based on a diagnostic condition, group of conditions, or on a disease-specific basis.

Salary. A survey of eight provinces in 1986 estimated that less than ten percent of the village health workers were paid a salary. Since then, this percentage may have decreased. Health workers at all other levels are paid a base salary. Receiving a salary from the village does not obviate the fact that patients pay a fee for each service received. Fees in those cases - usually the revenue from drug sales - may be collected by the village. The method for financing services does not need to be the same as for paying the provider. Paying a base salary augmented by bonuses or incentive payments is done in urban settings and has been considered for villages but no concrete examples can be

cited. This modality merits serious attention and warrants experimentation especially that an incentive system could motivate the village doctor to increase preventive, promotive and protective health activities.

Policy Issues and Policy Options

The Government of the PRC is keenly aware of the changes in rural health care organization and in financing that occurred in the 1980's and acknowledges the issues described above. Surveys to evaluate rural health services, national symposia and regional conferences multiplied during the latter years of the 1980's. National regulations are being drafted to redefine the role of the village doctor and to put the "prevention first" policy back on track.

The organization, delivery and financing of rural health care at the village level have been de facto privatized with the implicit approval of the Government. Privatization is defined here as the transfer of the financial risk and of service responsibility from the public payor to the private payor. Government has allowed this to happen without providing explicit models and regulations to guide the empowered communities in the organization, management and financing of their health services.

Support for preventive services has greatly decreased with the demise of the cooperative Maoist medical model and the collective welfare fund. Township and village health workers are reluctant to provide preventive and promotive services for which they are paid little and they must generate income from curative care, mainly from dispensing pharmaceutical drugs, and at higher levels of the health system also from diagnostic tests using biomedical equipment such as beta-ultrasound, x-ray machines and electrocardiographs. The poorest areas of the country are suffering most as they are losing the subsidies for preventive health actions and their economic base for generating income is weak. At issue is the equitable access by the poorer segments of the rural population to adequate, affordable and quality health services. Alternatives being discussed in China are: (i) public financing of preventive care; (ii) how to put limits on and control the practice of charging user fees to minimize its negative effects; (iii) for what services should charges be made and how to set the prices; (iv) should the establishment of risk-sharing schemes be encouraged; and (v) what are the proper role and functions of the village doctor (Song, et.al, 1991.)

Does China still need the Village Doctor? Several surveys report consistent yearly increases in the number of hospital admissions and outpatient visits to county level health care facilities and to some well equipped and staffed township hospitals. At the same time decreasing patient activity in village health stations and township health centers are observed. Field visits to village clinics confirm the low level of activity. Township and village community leaders - and even county health executives - argue that better physical facilities, more biomedical equipment, a greater variety of pharmaceuticals and better trained staff in townships and villages would increase the volume of activity and would reverse the flow of patients seeking care in county facilities. This controversial argument has been advanced in other countries. Strengthening service delivery at the lowest level may slow the flow

of patients to higher level facilities but will not overcome the bypassing phenomenon.

What is more important is the definition of what services could and should be offered at the village level and what services should not. Village level health activities should be clearly identified, be consonant with the epidemiological reality, provided by qualified personnel, and supported by a referral system with township and county institutions in an integrated delivery system. Better educated farmers with more disposable income, rising expectations for better quality medical care, increasing cost of medical acts, improved means of communication and transportation in many parts of China, and the incidence of noncommunicable diseases that are less well understood by patient and doctor are a set of factors that have combined to demand and expect more from the health services system. It would not be cost-effective to attempt to treat all conditions at the village or even the township level.

The Government of PRC is keenly aware of the need to redefine the functions of the village health workers and to provide normative guidance. In 1989, government encouraged strengthening and/or establishing village cooperative clinics. It also issued standards for village clinics categorizing them into three levels (A,B, and C) with differential allocation of number of staff, space and number of drugs by level. For example, the A level should have 1.5 village doctors per 1,000 population; the clinic should have three rooms (a treatment room, a diagnostic room and pharmacy, and a living room); and 250 kinds of drugs would be in stock. Subsequently in 1990, the MOPH organized a national workshop on rural health care delivery and the role and functions of the village doctor. Prior research served as a basis to guide the discussions to redefine the functions and the tasks of the village doctor in the areas of preventive and curative care, maternal and child health, including family planning, water supply and sanitation, health education, and managing village clinics.

There exists general agreement that the role and functions of the village doctor must be redefined and altered. National legislation is being prepared to define what services should be offered at each level and what drugs and equipment would be available. The Ministry of Public Health would define the job description of the village doctor and regulate what curative services and what drugs would be made available in village clinics. It would attempt to focus the performance of the village doctor on prevention and promotion and use the village doctor as the principal driving force to achieve the national goals quantitatively expressed in 13 indicators. The responsibilities of the barefoot doctor as outlined at the beginning of this paper may become the responsibilities - mutatis mutandis - of the village doctor and we may have come full circle but we are better prepared and more knowledgeable of what needs to be accomplished, how and by whom.

Villages should enter into a contractual relationship with township governments to provide technical support to the villages within the jurisdiction of the township. A township in China averages 16,000 people and has an average of 14 villages that range in size from 100 to over 3,000 people. Townships and villages could enter into a contract that would spell out the responsibilities of each party in the financing and provision of comprehensive health services to the rural population. Townships would need to assume responsibility for the

training and supervision of the village doctors, for making sure that standards of good practice are applied in village clinics and they would be the logistical nerve center of networks of villages. Applying the same rationale, townships could establish a contractual relationship with counties (each county averages 25 townships) thereby extending and better integrating the service delivery network one level further. Networking the three levels would stimulate service integration at these three levels the way they are intended to operate according to the original design of the system. Now they are functionally and structurally operating as separate entities. Given the vastness of the country and the wide variety and disparity in socioeconomic conditions, the networking approach would need to be adapted and modified to fit the social, economic, cultural and political reality of each geographic region.

National guidelines and regulations would be useful to facilitate the process of integrating village and township level health services. National guidelines would not necessarily mean a reversal of the decentralization policy or an infringement on the rights of the empowered communities. They would provide much needed administrative and technical guidance and assist in correcting the less desirable results of the first decade of experience under the household economic responsibility system. The role, functions, performance expectations, and the financing and payment of the village doctor of the 21st century will be different from those of the barefoot doctor of the first three decades of the PRC and from those of the village doctor of the last two decades of this century. At the same time, the role of the township as it relates to the village level health services should be redefined. Sufficient empirical knowledge is already available for use in guiding the transformation process and for assuring the rural population access to affordable, cost-effective and quality health services unrestricted by socioeconomic status and residence.

Conclusions

A first conclusion relates to the policy options available to the PRC government to deal with the village doctor issue as posited in this paper. Two are policies for the short term: (i) refocus the tasks of the village doctor (except in isolated rural areas) on preventive and promotive actions and gradually shift most curative care functions to easily accessible township health centers; or (ii) massively retrain the current stock of village doctors increasing their clinical knowledge and skills to cope with the old and new disease burden as well as providing incentives to carry out preventive health care activities. Both short term policies would require a change in practice behavior by restructuring the financial incentives and the sources of payment. The medium term policy would prepare the next generation of rural clinical practitioners. It would draw up and implement a manpower plan and a financial plan to retire over a fixed time period the current village doctor and replace them with secondary medical school and three year medical college graduates trained in Traditional and Western medicine.

A second conclusion relates to required changes in the answers given to the basic health policy questions: (i) what kind of services should be provided and to whom; (ii) who should provide the prioritized services and where should they be provided; and (iii) who should pay for the services and in what proportion. China inverted the manpower pyramid giving it a small base of university trained

professionals and a large top level mass of minimally trained practitioners but that were sufficiently skilled for carrying out those tasks that had been judged to contribute more -- and more quickly -- to raising the health status of large numbers of people. The answers to the three policy questions were clear, unequivocal and unambivalent during the first three decades of the PRC: preventive public health activities, provided to all, by minimally trained health workers, in the community, and paid by the community. The answers are no longer clear or obvious. The external environment to the health sector (macroeconomic, societal structure and organization) and the epidemiological dynamics have challenged the answers but not the questions. The strategic issue now is how best to define, formulate and implement modified and adaptive answers to the same policy questions consensually and decentralized anticipating the social, economic, political and epidemiological realities of the twenty-first century.

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